

Chapter 8: Transportation

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8.1 Introduction

This chapter discusses the existing travel patterns in the Mountain View Corridor (MVC) transportation impact analysis area. Travel patterns were analyzed primarily for automobiles and transit. Section 1.6.4, Transit Network, in Chapter 1 provides additional information about how transit is used in the MVC study area. Information about bicycle and pedestrian accessibility can be found in Chapter 11, Considerations Relating to Pedestrians and Bicyclists.

Transportation Impact Analysis Area. The transportation impact analysis area is the same as the MVC study area described in Section 1.1, Study Area Description. This area is bounded on the west by the Oquirrh Mountains, on the east by Bangerter Highway, and on the north by Interstate 80 (I-80) in Salt Lake County; the area is bounded on the south by Utah Lake, on the west by the Eagle Mountain City limits, and on the east by Interstate 15 (I-15) in Utah County. The analysis focused primarily on major roads such as arterials and freeways at proposed MVC interchanges that could be affected by increased traffic from the project.

8.2 Regulatory Setting

Technical Advisory T6640.8A, Guidance on Preparing and Processing Environmental and Section 4(f) Documents, from the Federal Highway Administration (FHWA) requires an analysis of travel patterns and accessibility in an Environmental Impact Statement (EIS).

8.3 Affected Environment

8.3.1 Resource Identification Methods

Data on travel patterns were obtained from several sources. The primary source was data obtained from the regional travel demand forecasting model from the Wasatch Front Regional Council (WFRC) and the Mountainland Association of Governments (MAG). Version 5.0 of the model was used to develop travel demand forecasts for 2001 and 2030. Accident data for the transportation impact analysis area were collected from the Utah Department of Transportation (UDOT) and West Valley City (West Valley City 2003). Existing transit ridership information was obtained from the Utah Transit Authority (UTA). However, UTA is in the process of revising its transit plan, which will result in a change of bus routes. The updated plan is expected to be implemented in August 2007.

The road segments evaluated in this EIS were selected because they could be affected by the proposed alternatives either by a direct connection to an interchange or by changes in travel patterns from redistribution of traffic in the transportation impact analysis area. Only freeways and arterials are evaluated in the regional travel demand model, and so only freeways and arterials are considered in this analysis. For additional information on the travel demand model used for and the traffic analysis conducted for this project, see Technical Report 05, Overall Travel Demand Modeling Methodology (MVC Management Team 2007).

8.3.2 Salt Lake County

8.3.2.1 Roadway Systems

Existing travel patterns and accessibility have been greatly affected by the population and employment growth in the cities in the transportation impact analysis area. The existing transportation system includes two major east-west freeways: I-80 on the northern edge of the transportation impact analysis area and 2100 South (State Route 201, or SR 201) from 7200 West to I-15. SR 201 and I-80 serve the area from Salt Lake City to West Valley City and Magna. The

major east-west arterials are 3500 South (SR 171), 4100 South, 4700 South, and 5400 South (SR 173), which serve West Valley City; 7800 South (SR 209), New Bingham Highway, and Old Bingham Highway, which serve West Jordan; 12600 South, which serves Riverton and Herriman; and 14600 South (SR 140), which serves Bluffdale and which accesses I-15.

In the northern part of the transportation impact analysis area, Bangerter Highway and SR 111 are the major north-south arterials. Within the transportation impact analysis area, Bangerter Highway serves as the east transportation route boundary and SR 111 serves as the west transportation route boundary. Other major north-south arterials are 5600 West and 7200 West. Redwood Road serves as a north-south connector in the southern part of the transportation impact analysis area.

The transportation facilities in western Salt Lake County south of SR 201 consist primarily of arterial streets that are not intended to accommodate long-distance through trips. The existing east-west and north-south arterial streets have numerous driveways (commercial and residential), and travel is hindered by the lack of a more continuous high-capacity, limited-access roadway system. In addition, some of the arterials do not provide complete access from west to east. This has led to congestion, unacceptable levels of service, and higher-than-average accident rates. These factors affect travel in the transportation impact analysis area.

Congestion Levels on Key Road Segments

The key road segments evaluated for Salt Lake County in this EIS along with congestion levels are shown in Table 8.3-1 on page 8-5. The table provides 2001 information from the WFRC regional travel model for daily volume and volume-to-capacity (V/C) ratios for the peak direction in the afternoon (PM) peak period, which is from 3:00 PM to 6:00 PM.

The existing V/C ratios are a measurement of the traffic congestion levels. A V/C ratio greater than 1.0 represents severe congestion because the volume of traffic exceeds the capacity of the road. All V/C ratios greater than 1.0 represent the same level of roadway traffic failure (that is, severe congestion); however, this chapter shows individual V/C ratios greater than 1.0 in order to show the magnitude of the severe congestion on a facility. A V/C ratio between 0.75 and 0.99 represents heavy congestion, and a V/C ratio between 0.5 and 0.74 represents moderate congestion. A V/C ratio of less than 0.5 indicates minor to no congestion.

The V/C ratios for the Salt Lake County portion of the transportation impact analysis area during the PM peak traffic period currently range from 0.22 to 1.06. This means that there is a wide range of congestion levels ranging from no congestion to severe congestion.

Delay and Level of Service at Key Intersections

In the transportation impact analysis area, key intersections with traffic signals were analyzed to determine how well they were functioning. The intersections evaluated in this EIS are shown in Table 8.3-2 on page 8-7.

Delay (the amount of time spent waiting at the intersection), measured in seconds per vehicle, and associated level of service (LOS) were used to quantify how the intersections were functioning. Levels of service, which range from A to F, are a measure of traffic operating conditions and how those conditions are perceived by drivers. LOS A represents a situation in which traffic travels at or near the speed limit and vehicles are able to maneuver easily. LOS F represents a situation in which traffic is heavily congested (stop-and-go traffic) and vehicles are not able to maneuver easily. (For more information, see Section 1.6.3.1, Level of Service.)

The operating conditions of the intersections range from little delay (8.0 seconds) and LOS A to considerable delay (71.5 seconds) and LOS E. LOS E is considered poor operating conditions.

8.3.2.2 Transit Systems

Transit service in the transportation impact analysis area in Salt Lake County is provided by UTA. Twenty local bus routes serve the transportation impact analysis area as shown in Table 8.3-3 on page 8-8. Most of the local routes in Salt Lake County provide service in an east-west direction in the transportation impact analysis area and then connect with a TRAX station or continue to downtown Salt Lake City outside the transportation impact analysis area.

Table 8.3-1. Existing Congestion Levels for Key Road Segments in Salt Lake County (PM Peak Traffic Period)

| Segment ^a | Existing (2001) Volume (Daily) | Existing (2001) V/C Ratio ^b (PM Peak Period) |
|---|--------------------------------|---|
| <i>Freeways</i> | | |
| I-15, (SB) SR 201 to I-215 | 90,500 | 0.81 |
| I-15, (NB) SR 201 to I-215 | 91,900 | 0.64 |
| I-15, (SB) I-215 to Bangerter Highway | 74,000 | 0.87 |
| I-15, (NB) I-215 to Bangerter Highway | 78,400 | 0.66 |
| I-15, (SB) Bangerter Highway to Point of the Mountain | 57,600 | 1.02 |
| I-15, (NB) Bangerter Highway to Point of the Mountain | 58,500 | 0.73 |
| I-80, (WB) 7200 West to Bangerter Highway | 12,400 | 0.28 |
| I-80, (EB) 7200 West to Bangerter Highway | 12,000 | 0.22 |
| I-80, (WB) Bangerter Highway to I-215 | 26,100 | 0.36 |
| I-80, (EB) Bangerter Highway to I-215 | 30,700 | 0.52 |
| I-80, (WB) I-215 to I-15 | 31,500 | 0.50 |
| I-80, (EB) I-215 to I-15 | 27,300 | 0.44 |
| SR 201, (WB) SR 111 to Bangerter Highway | 27,700 | 0.69 |
| SR 201, (EB) SR 111 to Bangerter Highway | 27,600 | 0.48 |
| SR 201, (WB) Bangerter Highway to I-15 | 42,800 | 0.86 |
| SR 201, (EB) Bangerter Highway to I-15 | 48,500 | 0.83 |
| <i>North-South Principal Arterials</i> | | |
| SR 111, SR 201 to 3500 South | 15,400 | 0.99 |
| SR 111, 3500 South to 6200 South | 9,000 | 0.38 |
| SR 111, 6200 South to New Bingham Highway | 4,400 | 0.38 |
| 7200 West, I-80 to SR 201 | Does not exist ^d | Does not exist ^d |
| 7200 West, SR 201 to 4100 South | 11,200 | 0.94 |
| 5600 West, I-80 to SR 201 ^c | 9,800 | 0.89 |
| 5600 West, SR 201 to 3500 South | 25,900 | 1.05 |
| 5600 West, 3500 South to 6200 South ^c | 19,200 | 1.06 |
| 5600 West, 6200 South to 9000 South ^c | 5,200 | 0.68 |
| <i>East-West Principal Arterials</i> | | |
| California Avenue, 7200 West to Bangerter Highway | 8,300 | 0.65 |
| 2700 South, SR 111 to 5600 West | 3,300 | 0.56 |
| 2700 South, 5600 West to Bangerter Highway | 5,400 | 0.35 |
| 3500 South, 8400 West to 5600 West ^c | 14,800 | 0.83 |
| 3500 South, 5600 West to Bangerter Highway ^c | 31,100 | 0.88 |
| 4100 South, SR 111 to 5600 West | 10,200 | 0.76 |
| 4100 South, 5600 West to Bangerter Highway | 24,400 | 0.91 |
| 5400 South, SR 111 to Bangerter Highway | 18,100 | 0.96 |
| 6200 South, SR 111 to Bangerter Highway ^c | 15,000 | 1.05 |
| 7800 South, SR 111 to Bangerter Highway | 6,400 | 0.84 |

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| Segment ^a | Existing (2001) Volume (Daily) | Existing (2001) V/C Ratio ^b (PM Peak Period) |
|--|--------------------------------------|--|
| 9000 South, SR 111 to Bangerter Highway ^c | 14,900 | 0.99 |
| 11400 South/11800 South, SR 111 to Bangerter Highway | 2,000 | 0.31 |
| 12600 South, 5600 West to Bangerter Highway | 17,700 | 0.87 |
| 13400 South, 5600 West to Bangerter Highway | 2,500 | 0.49 |

^a NB = northbound; SB = southbound; EB = eastbound; WB = westbound.

^b V/C ratios: Less than 0.5 = minor to no congestion; 0.5 to 0.74 = moderate congestion; 0.75 to 0.99 = heavy congestion; 1.0 or higher = severe congestion, stop-and-go traffic.

^c Segment is listed in the WFRC Long-Range Transportation Plan for future improvements.

^d The roadway does not currently exist but should be in place before the end of the 2030 planning period. The roadway was included in this table to provide consistency between the affected environment and environmental consequences sections of this chapter (Section 8.3 and Section 8.4).

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**Table 8.3-2. Existing Intersection Delay and Level of Service
in Salt Lake County**

| Intersection | Existing Intersection Conditions (PM Peak Period) | |
|-------------------------------------|--|-----------------------------|
| | Delay (seconds) | LOS |
| SR 111 & 3500 South | 19.2 | B |
| SR 111 & 5400 South | 33.4 ^a | D |
| SR 111 & 6200 South | Does not exist ^b | Does not exist ^b |
| 7200 West & 3500 South | 13.5 | B |
| 5600 West & California Avenue | 39.5 | D |
| 5600 West & SR 201 WB ramps | 30.7 | C |
| 5600 West & SR 201 EB ramps | 8.0 | A |
| 5600 West & 3500 South | 38.0 | D |
| 5600 West & 4100 South | 25.4 | C |
| 5600 West & 5400 South | 36.4 | D |
| 5600 West & 6200 South | 18.3 | B |
| 5600 West & 7800 South | Does not exist ^b | Does not exist ^b |
| 5600 West & 9000 South | Does not exist ^b | Does not exist ^b |
| Bangerter Highway & SR 201 WB ramps | 56.3 | E |
| Bangerter Highway & SR 201 EB ramps | 28.2 | C |
| Bangerter Highway & 3500 South | 71.5 | E |
| Bangerter Highway & 5400 South | 44.4 | D |
| Bangerter Highway & 6200 South | 34.9 | C |
| Bangerter Highway & 9000 South | 37.6 | D |
| Bangerter Highway & 10400 South | 16.1 | B |
| Bangerter Highway & 12600 South | 27.4 | C |
| Bangerter Highway & 13400 South | 26.4 | C |

^a The unsignalized intersection delay is for the roadway entering the intersection that has the highest delay.

^b The roadway does not currently exist but should be in place before the end of the 2030 planning period. The roadway was included in this table to provide consistency between the affected environment and environmental consequences sections of this chapter (Section 8.3 and Section 8.4).

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Table 8.3-3. Existing Bus Routes in the Salt Lake County Portion of the Impact Analysis Area

| Route | | Serves | Route Length ^a (One-Way Travel Time) | Peak Period Headway ^b |
|-------|--------------------------|---|---|-------------------------------------|
| 34 | West Kearns | West Kearns – Downtown Salt Lake City | 65 minutes | 30 minutes |
| 35 | East Kearns | East Kearns – Central Pointe TRAX Station | 45 minutes | 30 minutes |
| 36 | Granger | Granger – Meadowbrook TRAX Station | 50 minutes | 30 minutes |
| 37 | Magna | Magna – Mill Creek TRAX Station | 45 minutes | 30 minutes |
| 39 | East – West 39th South | 6000 West – Meadowbrook TRAX Station – 3500 East | 60 minutes | 20 minutes |
| 40 | East – West 45th South | 5600 West – Murray North TRAX Station – 3500 East | 65 minutes | 20 minutes |
| 42 | Dixie Valley | Jordan Valley Hospital – Meadowbrook TRAX Station | 60 minutes | 30 minutes |
| 43 | Bluffdale – Redwood Road | Bluffdale – Downtown Salt Lake City | 85 minutes | 15 minutes |
| 47 | Riverton (Shuttle) | 13400 South & Bangerter Highway – Sandy Civic Center TRAX Station | 55 minutes | 30 minutes |
| 66 | West Hunter | 8400 West & 3500 South – Ballpark TRAX Station | 60 minutes | 25 minutes |
| 75 | Tooele Army Depot | Grantsville – West Valley City – North Temple & Redwood Road | 115 minutes | 2 hours |
| 82 | East – West 7000 South | Jordan Landing – Midvale Fort Union TRAX Station | 25 minutes | 30 minutes |
| 84 | East – West 54th South | 5400 South & 5600 West – Murray Central TRAX Station | 35 minutes | 30 minutes |
| 88 | Copperton | Copperton – Midvale Center TRAX Station | 35 minutes | 35 minutes |
| 90 | East – West 90th South | Old Bingham Highway – Historic Sandy TRAX Station | 30 minutes | 30 minutes |
| 134 | Kearns Nite Ride | Kearns – Salt Lake City | 50 minutes | No peak service |
| 137 | Magna Nite Ride | Magna – Midvale Center TRAX Station | 45 minutes | No peak service |
| 334 | West Kearns Express | West Kearns – Downtown Salt Lake City | 65 minutes | 30 minutes |
| 337 | Magna Express | West Valley City – Magna – Downtown Salt Lake City | 65 minutes | 30 minutes |
| 347 | Riverton Express | Herriman – Riverton – Downtown Salt Lake City | 60 minutes | 30 minutes |

^a Includes travel time outside the transportation impact analysis area.^b Headway refers to the amount of time between buses on a given route. For a route with a 30-minute headway, a bus arrives at each stop every 30 minutes.

Source: UTA 2003

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8.3.3 Utah County

8.3.3.1 Roadway Systems

Travel in northwestern Utah County has been greatly affected by population growth in existing cities such as Lehi as well as the creation of new cities such as Saratoga Springs and Eagle Mountain. In northwestern Utah County, the main travel patterns are east-west as a result of two factors. First, there are growing residential areas along the west side of northern Utah County, and the main employment and destination centers in Utah County are located along the east side of the county in the Orem-Provo area. Second, the majority of motorists who want to travel north or south on I-15 (for example, to access employment and destination areas in Salt Lake County) use east-west arterials to access the freeway.

Redwood Road (SR 68) and I-15 are the primary north-south roadways in northern Utah County. Central Street and 2300 West also provide north-south connections in the area. 11600 South provides a limited north-south connection on the western side of Lehi.

The major east-west connector in Utah County is Main Street (8570 North, or SR 73) in Lehi. Some east-west connections can also be made using 2100 North, 1500 North, and 7350 North/1900 South, but these routes are not continuous.

Congestion Levels on Key Road Segments

As with Salt Lake County, the transportation facilities in northern Utah County, excluding I-15 and Redwood Road, are not intended to accommodate a high volume of long-distance through trips, freight movements, or commuting trips to and from business centers, which affects the overall travel patterns and accessibility. Key road segments were reviewed to determine existing and future levels of congestion. These segments were selected because they could be affected by the proposed alternatives either by a direct connection to an interchange or by changes in travel patterns from redistribution of traffic in the transportation impact analysis area.

Table 8.3-4 on page 8-11 shows the 2001 congestion levels according to the MAG regional travel demand model. The V/C ratios for the Utah County portion of the transportation impact analysis area during the PM peak traffic period currently range from 0.06 to 0.88. This means that there is a wide range of congestion levels ranging from no congestion to heavy congestion. The highest levels of congestion are along I-15, Redwood Road, and SR 73.

Delay and Level of Service at Key Intersections

Key intersections were analyzed to determine how well they were functioning in terms of delay and level of service. The intersections evaluated in this EIS are shown in Table 8.3-5 on page 8-12. The operating conditions of the intersections range from little delay (10.6 seconds) and LOS B to considerable delay (greater than 180 seconds) and LOS F. LOS F is considered unacceptable operating conditions.

8.3.3.2 Transit Systems

Seven UTA routes serve the Utah County part of the transportation impact analysis area as shown in Table 8.3-6 on page 8-12. Most of these routes serve areas along the I-15 corridor.

Table 8.3-4. Existing Congestion Levels for Key Road Segments in Utah County (PM Peak Traffic Period)

| Segment ^a | Existing (2001) Volume (Daily) | Existing (2001) V/C Ratio ^b (PM Peak Period) |
|--|--------------------------------------|--|
| <i>Freeways</i> | | |
| I-15, (SB) Point of the Mountain to Lehi 1200 W. | 54,300 | 0.81 |
| I-15, (NB) Point of the Mountain to Lehi 1200 W. | 53,500 | 0.75 |
| I-15, (SB) Lehi 1200 W. to Pleasant Grove | 46,800 | 0.68 |
| I-15, (NB) Lehi 1200 W. to Pleasant Grove | 48,000 | 0.66 |
| I-15, (SB) Pleasant Grove to University Parkway | 50,000 | 0.68 |
| I-15, (NB) Pleasant Grove to University Parkway | 50,400 | 0.69 |
| <i>North-South Principal Arterials</i> | | |
| Redwood Road, Bangerter Highway to SR 73 | 12,700 | 0.88 |
| 2300 West (Lehi), 2100 North to SR 73 | Does not exist ^c | Does not exist ^c |
| 2300 West (Lehi), SR 73 to 1900 South | 700 | 0.06 |
| <i>East-West Principal Arterials</i> | | |
| Bangerter Highway, 13400 S. to I-15 | 25,400 | 0.62 |
| Porter Rockwell, MVC to I-15 | Does not exist ^c | Does not exist ^c |
| 2100 North, MVC to I-15 | Does not exist ^c | Does not exist ^c |
| Lehi Main Street (SR 73), MVC to I-15 | 13,100 | 0.68 |
| 1000 South, SR 73 to I-15 | Does not exist ^c | Does not exist ^c |
| 1900 South, Redwood Road to I-15 | Does not exist ^c | Does not exist ^c |
| ^a NB = northbound; SB = southbound; EB = eastbound; WB = westbound. ^b V/C ratios: Less than 0.5 = minor to no congestion; 0.5 to 0.74 = moderate congestion; 0.75 to 0.99 = heavy congestion; 1.0 or higher = severe congestion, stop-and-go traffic. ^c The roadway does not currently exist but should be in place before the end of the 2030 planning period. The roadway was included in this table to provide consistency between the affected environment and environmental consequences sections of this chapter (Section 8.3 and Section 8.4). | | |

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Table 8.3-5. Existing Intersection Delay and Level of Service in Utah County

| Intersection | Existing Intersection Conditions (PM Peak Period) | |
|--------------------------------|---|-----|
| | Delay (seconds) | LOS |
| Redwood Road & SR 73 | 18.8 | B |
| 2300 West (Lehi) & SR 73 | >180 ^a | F |
| Center Street (Lehi) & SR 73 | 16.5 | B |
| Pleasant Grove & I-15 SB ramps | 35.5 | D |
| Pleasant Grove & I-15 NB ramps | 10.6 ^a | B |

^a The unsignalized intersection delay is for the roadway entering the intersection that has the highest delay.

Table 8.3-6. Existing Bus Routes in the Utah County Portion of the Impact Analysis Area

| Route | | Serves | Route Length ^a (one-way travel time) | Peak Period Headway ^b |
|-------|--|--|--|----------------------------------|
| 802 | Salt Lake City/Utah County Express | Provo – Salt Lake City | 100 minutes | 55 minutes |
| 803 | Salt Lake City / Spanish Fork Express | Orem – Salt Lake City | 110 minutes | 30 minutes |
| 804 | Salt Lake City / Lindon Express | Orem – Lindon – Pleasant Grove – Salt Lake City | 80 minutes | 60 minutes |
| 810 | University of Utah / American Fork Express | Orem – American Fork – Lehi – Salt Lake | 95 minutes | 30 minutes |
| 811 | Utah Valley / TRAX Connector | Provo – Sandy Civic Center TRAX Station | 70 minutes | 20 minutes |
| 816 | Utah County Night Service | East Bay – Timpanogos Transit Center – Sandy Civic Center TRAX Station | 80 minutes | No peak service |
| 850 | State Street (North) Shuttle | Lehi – Timpanogos Transit Center | 75 minutes | 30 minutes |

^a Includes travel time outside the transportation impact analysis area.^b Headway refers to the amount of time between buses on a given route. For a route with a 30-minute headway, a bus arrives at each stop every 30 minutes.

Source: UTA 2003

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8.4 Environmental Consequences

This section analyzes how the proposed alternatives would affect freeways, principal arterials, and transit in the transportation impact analysis area (the impact would be felt by both motorists and bus transit users). Most impacts would occur in areas where an alternative connects to existing freeways and arterials at interchanges. At interchange locations, there could be increased traffic as motorists enter and exit the MVC.

This section does not specifically address construction-related transportation impacts (see Chapter 21, Construction Impacts). However, during construction, there would be increased congestion around the MVC construction sites. For the most part, the impacts would occur as the MVC is constructed at or near existing freeways and arterials such as SR 201 or 3500 South. The delays associated with construction would be temporary, and alternate routes to minimize effects on motorists would be identified with signs.

8.4.1 Methodology

Roadway and transit impacts were analyzed for the Salt Lake County and Utah County action alternatives and the No-Action Alternative. The No-Action Alternative includes all of the expected roadway improvements except the MVC according to the long-range transportation plans for WFRC and MAG (MAG 2003; WFRC 2003).

Delay, level of service, and congestion based on V/C ratios were then calculated for key road segments, interchanges, and intersections to determine how each alternative would affect these roadway segments. The existing (2001) roadway conditions were compared to the No-Action Alternative to show the increase in travel congestion by 2030 if the MVC is not implemented. The changes in congestion on key road segments in 2030 as a result of the action alternatives were compared to the No-Action Alternative in 2030 to determine how the MVC would affect these segments. V/C ratios were used to compare the MVC action alternatives to the No-Action Alternative. Delay (in seconds) and level of service were used to analyze intersections that could be affected by the MVC.

8.4.2 No-Action Alternative

8.4.2.1 Roadway Systems

Under the No-Action Alternative, the MVC would not be built, but the roadway improvements in the WFRC and MAG long-range transportation plans would continue to be implemented. The projected traffic volumes under the No-Action Alternative reflect the projected roadway enhancements that would be made by 2030 to reduce congestion. Some of these key roadway improvements within the MVC transportation impact analysis area listed in the regional transportation plans include:

- Salt Lake County
 - Widen and construct a new alignment to four lanes on 5600 West.
 - Widen Redwood Road to four lanes.
 - Widen SR 111 to four lanes.
 - Widen 3500 South to four lanes.
 - Widen 4700 South to four/six lanes.
 - Widen and construct a new alignment to four lanes on 7800 South.
 - Widen Old Bingham Highway to four lanes.
 - Widen 9000 South to six lanes.
 - Widen and construct a new alignment to four lanes on 11400 South.
 - Widen and construct a new alignment to four lanes on 12600 South.
- Utah County
 - Widen I-15 to twelve lanes.
 - Widen Redwood Road to four lanes.
 - Widen SR 73 to four lanes.
 - Construct a new four-lane roadway on 1000 South.
 - Construct a new four-lane roadway on Pony Express Road.
 - Widen Geneva Road to four lanes.
 - Construct a new four-lane, north-south roadway west of I-15 in Orem, Vineyard, Lindon, and American Fork.

Congestion Levels on Key Road Segments

Table 8.4-1 on page 8-16 shows the future congestion levels in terms of V/C ratios and summarizes the projected conditions for key road segments under the No-Action Alternative in 2030.

Several of the road segments are projected to experience severe congestion during the PM peak traffic period as indicated by the V/C ratios. As the V/C ratio increases, the road is considered to be more congested. The V/C ratios range

from 0.45 to 1.36 for Salt Lake County and from 0.79 to 1.37 for Utah County. This means that the congestion levels for most road segments in both Salt Lake County and Utah County are projected to increase under the No-Action Alternative through 2030. Shaded cells in Table 8.4-1 indicate road segments where conditions would be more congested in 2030 than under existing conditions (2001). For those segments where the 2030 conditions are better than the existing conditions, it is likely that the WFRC and MAG long-range plans include proposed improvements to those segments between 2001 and 2030.

Delay and Level of Service at Key Intersections

Table 8.4-2 on page 8-18 shows how key intersections would operate under the No-Action Alternative in 2030. In the table, shaded cells indicate intersections where conditions would be worse in 2030 than under existing conditions. All of the existing intersections on Bangerter Highway and all but one of the existing intersections on 5600 West are expected to operate at an undesirable level of service and experience long delays. The No-Action conditions would be worse than the existing conditions in terms of increased delay and decreased level of service.

8.4.2.2 Transit Systems

The 2030 baseline transit system is the transit system that would be in place under the No-Action Alternative. This baseline transit system is based on the WFRC and MAG long-range transportation plans, except for a fixed-guideway transit line (that is, light rail, trolley line, or commuter rail) in the Mountain View/5600 West corridor. The WFRC long-range plan included a bus rapid transit line in this corridor. Bus rapid transit is a bus that provides express service using either a dedicated right-of-way, high-occupancy vehicle lane or ordinary streets but with less frequent bus stops. For the baseline transit system, a local bus route was included along 5600 West.

The 2030 baseline transit system under the No-Action Alternative is summarized in Table 8.4-3 on page 8-19. The number of daily transit trips in the transportation impact analysis area would be 25,520. This is less than 1% of the total daily trips in the transportation impact analysis area.

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Table 8.4-1. Congestion Levels for Key Road Segments under Existing Conditions and the No-Action Alternative (PM Peak Traffic Period)

| Segment | V/C Ratio ^a (PM Peak Period) | |
|---|--|---------------------------------|
| | Existing Conditions (2001) | No-Action Alternative (2030) |
| <u>Salt Lake County</u> | | |
| <i>Freeways</i> | | |
| I-15, (SB) SR 201 to I-215 | 0.81 | 0.98 |
| I-15, (NB) SR 201 to I-215 | 0.64 | 0.79 |
| I-15, (SB) I-215 to Bangerter Highway | 0.87 | 1.11 |
| I-15, (NB) I-215 to Bangerter Highway | 0.66 | 0.93 |
| I-15, (SB) Bangerter Highway to Point of the Mountain | 1.02 | 1.23 |
| I-15, (NB) Bangerter Highway to Point of the Mountain | 0.73 | 0.86 |
| I-80, (WB) 7200 West to Bangerter Highway | 0.28 | 0.74 |
| I-80, (EB) 7200 West to Bangerter Highway | 0.22 | 0.46 |
| I-80, (WB) Bangerter Highway to I-215 | 0.36 | 0.64 |
| I-80, (EB) Bangerter Highway to I-215 | 0.52 | 0.89 |
| I-80, (WB) I-215 to I-15 | 0.50 | 0.74 |
| I-80, (EB) I-215 to I-15 | 0.44 | 0.71 |
| SR 201, (WB) SR 111 to Bangerter Highway | 0.69 | 0.88 |
| SR 201, (EB) SR 111 to Bangerter Highway | 0.48 | 0.76 |
| SR 201, (WB) Bangerter Highway to I-15 | 0.86 | 0.84 |
| SR 201, (EB) Bangerter Highway to I-15 | 0.83 | 0.93 |
| <i>North-South Principal Arterials</i> | | |
| SR 111, SR 201 to 3500 South | 0.99 | 1.24 |
| SR 111, 3500 South to 6200 South | 0.38 | 1.40 |
| SR 111, 6200 South to New Bingham Highway | 0.38 | 1.32 |
| 7200 West, I-80 to SR 201 | Does not exist ^b | 0.64 |
| 7200 West, SR 201 to 4100 South | 0.94 | 1.27 |
| 5600 West, I-80 to SR 201 | 0.89 | 0.69 |
| 5600 West, SR 201 to 3500 South | 1.05 | 1.27 |
| 5600 West, 3500 South to 6200 South | 1.06 | 1.36 |
| 5600 West, 6200 South to 9000 South | 0.68 | 1.14 |
| <i>East-West Principal Arterials</i> | | |
| California Avenue, 7200 West to Bangerter Highway | 0.65 | 0.45 |
| 2700 South, SR 111 to 5600 West | 0.56 | 0.80 |
| 2700 South, 5600 West to Bangerter Highway | 0.35 | 0.94 |
| 3500 South, 8400 West to 5600 West | 0.83 | 0.75 |
| 3500 South, 5600 West to Bangerter Highway | 0.88 | 0.98 |

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| Segment | V/C Ratio ^a (PM Peak Period) | |
|--|--|---------------------------------|
| | Existing Conditions (2001) | No-Action Alternative (2030) |
| 4100 South, SR 111 to 5600 West | 0.76 | 0.75 |
| 4100 South, 5600 West to Bangerter Highway | 0.91 | 1.09 |
| 5400 South, SR 111 to Bangerter Highway | 0.96 | 0.99 |
| 6200 South, SR 111 to Bangerter Highway | 1.05 | 1.04 |
| 7800 South, SR 111 to Bangerter Highway | 0.84 | 1.00 |
| 9000 South, SR 111 to Bangerter Highway | 0.99 | 1.01 |
| 11400 South/11800 South, SR 111 to Bangerter Highway | 0.31 | 0.93 |
| 12600 South, 5600 West to Bangerter Highway | 0.87 | 1.08 |
| 13400 South, 5600 West to Bangerter Highway | 0.49 | 0.91 |

Utah County*Freeways*

| | | |
|---|------|------|
| I-15, (SB) County Line to Lehi 1200 W. | 0.81 | 0.91 |
| I-15, (NB) County Line to Lehi 1200 W. | 0.75 | 0.82 |
| I-15 (SB) Lehi 1200 W. to Pleasant Grove | 0.68 | 0.80 |
| I-15 (NB) Lehi 1200 W. to Pleasant Grove | 0.66 | 0.79 |
| I-15, (SB) Pleasant Grove to University Parkway | 0.68 | 0.82 |
| I-15, (SB) Pleasant Grove to University Parkway | 0.69 | 0.84 |

North-South Principal Arterials

| | | |
|--|-----------------------------|------|
| Redwood Road, Bangerter Highway to SR 73 | 0.88 | 1.37 |
| 2300 West (Lehi), 2100 North to SR 73 | Does not exist ^b | 1.11 |
| 2300 West (Lehi), SR 73 to 1900 South | 0.06 | 0.83 |

East-West Principal Arterials

| | | |
|---------------------------------------|-----------------------------|-----------------------------|
| Bangerter Highway, 13400 S. to I-15 | 0.62 | 0.97 |
| Porter Rockwell, MVC to I-15 | Does not exist ^b | Does not exist ^b |
| 2100 North, MVC to I-15 | Does not exist ^b | Does not exist ^b |
| Lehi Main Street (SR 73), MVC to I-15 | 0.68 | 1.24 |
| 1000 South, SR 73 to I-15 | Does not exist ^b | 1.25 |
| 1900 South, Redwood Road to I-15 | Does not exist ^b | Does not exist ^b |

^a V/C ratios: Less than 0.5 = minor to no congestion; 0.5 to 0.74 = moderate congestion; 0.75 to 0.99 = heavy congestion; 1.0 or higher = severe congestion, stop-and-go traffic.

^b The roadway does not currently exist but should be in place before the end of the 2030 planning period. The roadway was included in this table to provide consistency between the affected environment and environmental consequences sections of this chapter (Section 8.3 and Section 8.4).

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Table 8.4-2. Intersection Delay and Level of Service under Existing Conditions and the No-Action Alternative

| Intersection | Intersection Conditions (PM Peak Period) | | | |
|-------------------------------------|---|-----------------------------|---------------------------------|-----|
| | Existing Conditions (2001) | | No-Action Alternative (2030) | |
| | Delay (seconds) | LOS | Delay (seconds) | LOS |
| <i>Salt Lake County</i> | | | | |
| SR 111 & 3500 South | 19.2 | B | 51.0 | D |
| SR 111 & 5400 South | 33.4 ^a | D | 48.3 | D |
| SR 111 & 6200 South | Does not exist ^b | Does not exist ^b | 20.9 | C |
| 7200 West & 3500 South | 13.5 | B | 80.5 | F |
| 5600 West & California Avenue | 39.5 | D | 47.8 | D |
| 5600 West & SR 201 WB ramps | 30.7 | C | 46.2 | D |
| 5600 West & SR 201 EB ramps | 8.0 | A | 12.4 | B |
| 5600 West & 3500 South | 38.0 | D | 93.9 | F |
| 5600 West & 4100 South | 25.4 | C | 94.1 | F |
| 5600 West & 5400 South | 36.4 | D | 108.4 | F |
| 5600 West & 6200 South | 18.3 | B | 71.2 | E |
| 5600 West & 7800 South | Does not exist ^b | Does not exist ^b | 36.7 | D |
| 5600 West & 9000 South | Does not exist ^b | Does not exist ^b | 61.1 | E |
| Bangerter Highway & SR 201 WB ramps | 56.3 | E | 64.0 | E |
| Bangerter Highway & SR 201 EB ramps | 28.4 | C | 74.9 | E |
| Bangerter Highway & 3500 South | 71.5 | E | 147.4 | F |
| Bangerter Highway & 5400 South | 44.4 | D | 163.5 | F |
| Bangerter Highway & 6200 South | 34.9 | C | 184.8 | F |
| Bangerter Highway & 9000 South | 37.6 | D | 162.1 | F |
| Bangerter Highway & 10400 South | 16.1 | B | 153.3 | F |
| Bangerter Highway & 12600 South | 27.4 | C | 95.3 | F |
| Bangerter Highway & 13400 South | 26.4 | C | >180 | F |
| <i>Utah County</i> | | | | |
| Redwood Road & SR 73 | 18.8 | B | 147.9 | F |
| 2300 West (Lehi) & SR 73 | >180 ^a | F | 139.4 | F |
| Center Street (Lehi) & SR 73 | 16.5 | B | 27.4 | C |
| Pleasant Grove & I-15 SB ramps | 35.5 | D | 20.5 | C |
| Pleasant Grove & I-15 NB ramps | 10.6 ^a | B | 15.6 | B |

^a The unsignalized intersection delay is for the roadway entering the intersection that has the highest delay.

^b The roadway does not currently exist but should be in place before the end of the 2030 planning period. The roadway was included in this table to provide consistency between the affected environment and environmental consequences sections of this chapter (Section 8.3 and Section 8.4).

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Table 8.4-3. 2030 Baseline Transit Routes under the No-Action Alternative

| Route | | Serves | Peak Period Headway |
|------------------------------------|----------------------------------|---|---------------------|
| <u>Salt Lake County</u> | | | |
| <i>Existing Transit Service</i> | | | |
| 34 | West Kearns | West Kearns – Downtown Salt Lake City | 30 minutes |
| 35 | East Kearns | East Kearns – Central Pointe TRAX Station | 30 minutes |
| 37 | Magna | Magna – Mill Creek TRAX Station | 30 minutes |
| 39 | East – West 39th South | 6000 West – Meadowbrook TRAX Station – 3500 East | 30 minutes |
| 40 | East – West 45th South | 5600 West – Murray North TRAX Station – 3500 East | 15 minutes |
| 42 | Dixie Valley | Daybreak – Meadowbrook TRAX Station | 15 minutes |
| 43 | Bluffdale – Redwood Road | Bluffdale – Downtown Salt Lake City | 15 minutes |
| 47 | Riverton (Shuttle) | 13400 South & Bangerter Highway – Sandy Civic Center TRAX Station | 30 minutes |
| 66 | West Hunter | 8400 West & 3500 South – Ballpark TRAX Station | 15 minutes |
| 82 | East – West 7000 South | 7800 South & SR 111 – Midvale Fort Union TRAX Station | 15 minutes |
| 84 | East – West 54th South | 5400 South & SR 111 – Murray Central TRAX Station | 15 minutes |
| 88 | Copperton | Copperton – Midvale Center TRAX Station | 15 minutes |
| 334 | West Kearns Express | West Kearns – Downtown Salt Lake City | 30 minutes |
| 337 | Magna Express | West Valley City – Magna – Downtown Salt Lake City | 30 minutes |
| <i>New Transit Service by 2030</i> | | | |
| | California Avenue/ 1300 South | Magna – Ballpark TRAX Station – University of Utah | 10 minutes |
| | SR 201 Express | Magna – Central Pointe TRAX Station | 60 minutes |
| | 6200 South | West Jordan – Fashion Place West TRAX Station | 15 minutes |
| | 3200 West | Riverton – Taylorsville | 30 minutes |
| | Bangerter Highway | SLC Int'l. Airport – South Jordan | 15 minutes |
| | 5600 West | 3500 South – Old Bingham Highway | 30 minutes |
| | 10600 South | Daybreak – Sandy Civic Center TRAX Station | 30 minutes |
| | 11800 South | Daybreak – Draper | 15 minutes |

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| Route | Serves | Peak Period Headway |
|--|------------------------------------|---------------------|
| <i>New Transit Service by 2030 (continued)</i> | | |
| 12600 South | Herriman – Draper | 15 minutes |
| Mid Jordan Light-Rail Transit | Daybreak – Downtown Salt Lake City | 15 minutes |
| 3500 South Bus Rapid Transit | Magna – West Valley City | 15 minutes |

Utah County*Existing Transit Service*

| | | | |
|-----|------------------------------|----------------------------------|------------|
| 850 | State Street (North) Shuttle | Lehi – Timpanogos Transit Center | 30 minutes |
|-----|------------------------------|----------------------------------|------------|

New Transit Service by 2030

| | | |
|--------------------|---------------------------------|------------|
| Commuter Rail | Downtown Salt Lake City – Provo | 20 minutes |
| Eagle Mountain | Eagle Mountain – Lehi | 30 minutes |
| Redwood Road/SR 73 | Bluffdale – American Fork | 30 minutes |
| Saratoga Springs | Saratoga Springs – Lehi | 30 minutes |
| State Street North | Lehi – Pleasant Grove | 30 minutes |

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8.4.3 Salt Lake County Alternatives

In Salt Lake County, two roadway alternatives and a transit alternative which would be implemented as part of the roadway alternatives are under consideration: the 5600 West Transit Alternative, the 5800 West Freeway Alternative, and the 7200 West Freeway Alternative. Under the 5600 West Transit Alternative, there is a dedicated right-of-way option and a mixed-traffic option. In addition, a tolling option was considered for each freeway alternative. Impacts under each combination of alternatives and options are discussed in the following sections.

8.4.3.1 5600 West Transit Alternative

As described in Chapter 2, Alternatives, two transit options are under consideration along 5600 West in Salt Lake County. One option, the Dedicated Right-of-Way Option, would incorporate a transit system running down the center of the roadway, and the other, the Mixed-Traffic Option, would incorporate a transit system running alongside the roadway. See Section 2.1.5.1, Transit Considerations, for more details on the proposed transit service. Both transit alignments would be about 24 miles long and would extend from Herriman to the Salt Lake City International Airport. Most of the transit alignment would be along 5600 West in Salt Lake County.

The two options differ in terms of whether the transit lane is separated from other traffic and in the number of transit stations along the transit line. The Dedicated Right-of-Way Option would have 16 stations and the Mixed-Traffic Alternative would have 25 stations.

5600 West Transit Alternative with Dedicated Right-of-Way Transit Option

Under this option, the center-running transit system would require the acquisition of additional right-of-way at station and park-and-ride lot locations and along the segments of the proposed transit line where 5600 West does not currently exist.

Under the No-Action Alternative, the number of daily transit trips in 2030 using bus and light rail, including trips with one or both ends within the transportation impact analysis area, would be 25,520 trips. Under the Dedicated Right-of-Way Transit Alternative, the number of daily transit trips would increase to 28,490 (a 12% increase).

Operation of transit along 5600 West would result in some reduced travel time and congestion as posted vehicle speeds are reduced from 45 mph (miles per hour) to 35 mph so that the roadway can accommodate more pedestrian traffic

related to the transit service. However, congestion would still be less than under the No-Action Alternative as shown above in Table 8.4-1 on page 8-16.

5600 West Transit Alternative with Mixed-Traffic Transit Option

Under this option, the side-running transit system would require the acquisition of additional right-of-way at station and park-and-ride lot locations and along the segments of the proposed transit line where 5600 West does not currently exist.

Under the No-Action Alternative, the number of daily transit trips in 2030 using bus and light rail, including trips with one or both ends within the transportation impact analysis area, would be 25,520 trips. Under the Mixed-Traffic Option, the number of daily transit trips would increase to 26,940 trips (a 6% increase).

The impacts from operating transit under the Mixed-Transit Option would be the same as those from the Dedicated Right-of-Way Option except that there would be greater congestion under the Mixed-Transit Option. This greater congestion would occur because the transit vehicle would operate in traffic instead of in a separate lane as under the Dedicated Right-of-Way Transit Option. By having the fixed-guideway transit operating in traffic, there would also be a greater potential for accidents.

8.4.3.2 5800 West Freeway Alternative

As described in Chapter 2, Alternatives, this alternative would consist of a freeway extending from I-80 to the Utah County line. The 5800 West Freeway Alternative that was analyzed included the Dedicated Right-of-Way Option from the 5600 West Transit Alternative. The

| 5800 West Freeway Alternative Impacts | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 12 |
| Segments with less congestion compared to the No-Action Alternative | 27 |
| Intersections with greater delay compared to the No-Action Alternative | 3 |
| Intersections with less delay compared to the No-Action Alternative | 19 |

combination of the 5800 West Freeway Alternative with either of the transit options would result in the same travel demand impacts, so the results of the analysis would have been the same if the Mixed-Traffic Option had been used.

Congestion Levels on Key Road Segments

Table 8.4-4 on page 8-24 summarizes the projected V/C ratios for key road segments in Salt Lake County under the 5800 West Freeway Alternative.

As the volume of traffic approaches the capacity of the road, the amount of congestion increases and the travel time decreases. In Table 8.4-4, the shaded cells indicate road segments where the congestion levels under an action alternative would be greater than those under the No-Action Alternative. Compared to the No-Action Alternative, the road segments under the 5800 West Freeway Alternative would have lower levels of congestion except on I-80, three out of four SR 201 segments, and three segments of principal arterials. On I-80 and SR 201, congestion would be heavy for all but one segment under the No-Action Alternative and all of the segments for the 5800 West Freeway Alternative. The greater level of congestion under the 5800 West Freeway Alternative is a result of the traffic either entering or exiting the MVC from I-80 and SR 201.

Although key principal arterials in the transportation impact analysis area would have direct access to the MVC through interchanges, the overall congestion levels on the roadway segments analyzed would be reduced under the 5800 West Freeway Alternative compared to the No-Action Alternative. As shown in Table 8.4-4, 27 road segments would operate at improved conditions in 2030 compared to 12 for the No-Action Alternative. The reduced congestion on these segments would be due to motorists using the MVC during the primary morning and evening commute periods instead of using the principal arterials.

Delay and Level of Service at Key Intersections

Table 8.4-5 on page 8-26 shows how key intersections would operate under the 5800 West Freeway Alternative. In the table, shaded cells indicate intersections where conditions would be more congested under an action alternative than under the No-Action Alternative. The level of service for all but three of the intersections analyzed would improve under the 5800 West Freeway Alternative.

▲ ▲

Table 8.4-4. 2030 Congestion Levels for Key Road Segments under the No-Action Alternative and Salt Lake County Action Alternatives

| Segment | 2030 V/C Ratio ^a (PM Peak Period) | | |
|---|---|-------------------------------------|-------------------------------------|
| | No-Action Alternative | 5800 West Freeway Alternative | 7200 West Freeway Alternative |
| <i>Freeways</i> | | | |
| I-15, (SB) SR 201 to I-215 | 0.98 | 0.94 | 0.95 |
| I-15, (NB) SR 201 to I-215 | 0.79 | 0.75 | 0.75 |
| I-15, (SB) I-215 to Bangerter Highway | 1.11 | 1.06 | 1.06 |
| I-15, (NB) I-215 to Bangerter Highway | 0.93 | 0.87 | 0.87 |
| I-15, (SB) Bangerter Highway to Point of the Mountain | 1.23 | 0.99 | 0.99 |
| I-15, (NB) Bangerter Highway to Point of the Mountain | 0.86 | 0.67 | 0.67 |
| I-80, (WB) 7200 West to Bangerter Highway | 0.74 | 0.95 | 0.95 |
| I-80, (EB) 7200 West to Bangerter Highway | 0.46 | 0.73 | 0.74 |
| I-80, (WB) Bangerter Highway to I-215 | 0.64 | 0.76 | 0.73 |
| I-80, (EB) Bangerter Highway to I-215 | 0.89 | 0.97 | 0.95 |
| I-80, (WB) I-215 to I-15 | 0.74 | 0.80 | 0.77 |
| I-80, (EB) I-215 to I-15 | 0.71 | 0.78 | 0.76 |
| SR 201, (WB) SR 111 to Bangerter Highway | 0.88 | 0.91 | 0.92 |
| SR 201, (EB) SR 111 to Bangerter Highway | 0.76 | 0.73 | 0.75 |
| SR 201, (WB) Bangerter Highway to I-15 | 0.84 | 0.95 | 0.91 |
| SR 201, (EB) Bangerter Highway to I-15 | 0.93 | 0.96 | 0.92 |
| <i>North-South Principal Arterials</i> | | | |
| SR 111, SR 201 to 3500 South | 1.24 | 0.87 | 0.71 |
| SR 111, 3500 South to 6200 South | 1.40 | 1.03 | 0.92 |
| SR 111, 6200 South to New Bingham Highway | 1.32 | 1.08 | 1.05 |
| 7200 West, I-80 to SR 201 | 0.64 | 0.65 | NA |
| 7200 West, SR 201 to 4100 South | 1.27 | 0.92 | 0.91 |
| 5600 West, I-80 to SR 201 | 0.69 | 0.63 | 0.80 |
| 5600 West, SR 201 to 3500 South | 1.27 | 0.91 | 1.08 |
| 5600 West, 3500 South to 6200 South | 1.36 | 1.05 | 1.09 |
| 5600 West, 6200 South to 9000 South ^b | 1.14 | 0.93 | 0.92 |
| <i>East-West Principal Arterials</i> | | | |
| California Avenue, 7200 West to Bangerter Highway | 0.45 | 0.61 | 0.80 |
| 2700 South, SR 111 to 5600 West | 0.80 | 0.70 | 0.85 |
| 2700 South, 5600 West to Bangerter Highway | 0.94 | 0.89 | 0.89 |
| 3500 South, 8400 West to 5600 West | 0.75 | 0.75 | 0.80 |
| 3500 South, 5600 West to Bangerter Highway | 0.98 | 0.89 | 0.90 |

▼ ▼

| Segment | 2030 V/C Ratio ^a (PM Peak Period) | | |
|--|---|-------------------------------------|-------------------------------------|
| | No-Action Alternative | 5800 West Freeway Alternative | 7200 West Freeway Alternative |
| 4100 South, SR 111 to 5600 West | 0.75 | 0.74 | 0.70 |
| 4100 South, 5600 West to Bangerter Highway | 1.09 | 0.94 | 0.96 |
| 5400 South, SR 111 to Bangerter Highway | 0.99 | 0.90 | 0.97 |
| 6200 South, SR 111 to Bangerter Highway | 1.04 | 0.95 | 0.97 |
| 7800 South, SR 111 to Bangerter Highway | 1.00 | 0.89 | 0.92 |
| 9000 South, SR 111 to Bangerter Highway | 1.01 | 0.94 | 0.97 |
| 11400 South/11800 South, SR 111 to Bangerter Highway | 0.93 | 0.91 | 0.92 |
| 12600 South, 5600 West to Bangerter Highway | 1.08 | 1.03 | 1.04 |
| 13400 South, 5600 West to Bangerter Highway | 0.91 | 0.93 | 0.94 |

NA = not applicable

^a V/C ratios: Less than 0.5 = minor to no congestion; 0.5 to 0.74 = moderate congestion; 0.75 to 0.99 = heavy congestion; 1.0 or higher = severe congestion, stop-and-go traffic.

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Table 8.4-5. 2030 Intersection Delay and Level of Service under the No-Action Alternative and Salt Lake County Action Alternatives

| Intersection | 2030 Intersection Conditions (PM Peak Period) | | | | | |
|-------------------------------------|--|-----|----------------------------------|-----|----------------------------------|-----|
| | No-Action Alternative | | 5800 West Freeway Alternative | | 7200 West Freeway Alternative | |
| | Delay (seconds) | LOS | Delay (seconds) | LOS | Delay (seconds) | LOS |
| SR 111 & 3500 South | 51.0 | D | 28.0 | C | 25.9 | C |
| SR 111 & 5400 South | 48.3 | D | 33.2 | C | 27.5 | C |
| SR 111 & 6200 South | 20.9 | C | 22.5 | C | 19.2 | B |
| 7200 West & 3500 South | 80.5 | F | 30.2 | C | 83.0 ^a | F |
| 5600 West & California Avenue | 47.8 | D | 61.4 | E | 74.4 | E |
| 5600 West & SR 201 WB ramps | 46.2 | D | 15.0 | B | 29.1 | C |
| 5600 West & SR 201 EB ramps | 12.4 | B | 5.2 | A | 14.2 | B |
| 5600 West & 3500 South | 93.9 | F | 89.2 | F | 70.4 | E |
| 5600 West & 4100 South | 94.1 | F | 58.2 | E | 44.6 | D |
| 5600 West & 5400 South | 108.4 | F | 54.1 | D | 52.6 | D |
| 5600 West & 6200 South | 71.2 | E | 51.6 | D | 54.3 | D |
| 5600 West & 7800 South | 36.7 | D | 45.1 | D | 48.2 | D |
| 5600 West & 9000 South | 61.1 | E | 48.1 | D | 44.9 | D |
| Bangerter Highway & SR 201 WB ramps | 64.0 | E | 42.1 | D | 56.8 | E |
| Bangerter Highway & SR 201 EB ramps | 74.9 | E | 42.3 | D | 15.9 | B |
| Bangerter Highway & 3500 South | 147.4 | F | 94.3 | F | 108.1 | F |
| Bangerter Highway & 5400 South | 163.5 | F | 54.2 | D | 65.4 | E |
| Bangerter Highway & 6200 South | 184.8 | F | 109.6 | F | 119.6 | F |
| Bangerter Highway & 9000 South | 162.1 | F | 105.7 | F | 111.1 | F |
| Bangerter Highway & 10400 South | 153.3 | F | 73.1 | E | 80.6 | F |
| Bangerter Highway & 12600 South | 95.3 | F | 45.8 | D | 47.0 | D |
| Bangerter Highway & 13400 South | >180 | F | >180 | F | >180 | F |

^a Delay and LOS represent a weighted average of the northbound and southbound intersections.

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Combined Impacts of 5800 West Freeway and 5600 West Transit Alternatives

The 5800 West Freeway Alternative would be implemented with one of the two 5600 West Transit Alternative options. The combination of the freeway alternative with either of the transit options would result in the same travel demand impacts.

5800 West Freeway Alternative with Dedicated Right-of-Way Transit Option

Because the 5800 West Freeway Alternative was evaluated with the Dedicated Right-of-Way Transit Option, the impacts to delay and level of service from the 5800 West Freeway Alternative with Dedicated Right-of-Way Transit Option would be the same as those from the 5800 West Freeway Alternative above.

5800 West Freeway Alternative with Mixed-Traffic Transit Option

Because the 5800 West Freeway Alternative was evaluated with the Dedicated Right-of-Way Transit Option, and because the combination of the 5800 West Freeway Alternative with the Mixed-Traffic Transit Option would have the same travel demand impacts, the impacts to delay and level of service from the 5800 West Freeway Alternative with Mixed-Traffic Transit Option would be the same as those from the 5800 West Freeway Alternative above.

5800 West Freeway Alternative with Tolling Option

This option would consist of a freeway extending from I-80 to the Utah County line.

Congestion Levels on Key Road Segments

Table 8.4-6 on page 8-29 summarizes the projected V/C ratios for key road segments in Salt Lake County under the 5800 West Freeway Alternative with Tolling Option.

| 5800 West Freeway Alternative with Tolling Option Impacts | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 19 |
| Segments with less congestion compared to the No-Action Alternative | 20 |
| Intersections with greater delay compared to the No-Action Alternative | 3 |
| Intersections with less delay compared to the No-Action Alternative | 19 |

In Table 8.4-6, the shaded cells indicate road segments where the congestion levels under each alternative would be greater than those under the No-Action Alternative. Compared to the No-Action Alternative, slightly more principal arterial segments would have lower levels of congestion under the 5800 West Freeway Alternative with Tolling Option than under the No-Action Alternative.

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On I-80 and SR 201, congestion would be mostly heavy under both the No-Action Alternative and the 5800 West Freeway Alternative with Tolling Option.

As shown in Table 8.4-6, 20 road segments would operate at improved conditions and 19 would operate at a more congested conditions in 2030 compared to the No-Action Alternative.

Delay and Level of Service at Key Intersections

Table 8.4-7 on page 8-31 shows how key intersections would operate under the 5800 West Freeway Alternative with Tolling Option. In the table, shaded cells indicate intersections where conditions would be more congested under each alternative than under the No-Action Alternative. Compared to the No-Action Alternative, all but three of the intersections analyzed would experience improved performance under the 5800 West Freeway Alternative with Tolling Option.

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Table 8.4-6. 2030 Congestion Levels for Key Road Segments under the No-Action Alternative and Salt Lake County Action Alternatives with Tolling Option

| Segment | 2030 V/C Ratio ^a (PM Peak Period) | | |
|---|---|-------------------------------------|-------------------------------------|
| | No-Action Alternative | 5800 West Freeway Alternative | 7200 West Freeway Alternative |
| <i>Freeways</i> | | | |
| I-15, (SB) SR 201 to I-215 | 0.98 | 0.96 | 0.97 |
| I-15, (NB) SR 201 to I-215 | 0.79 | 0.78 | 0.78 |
| I-15, (SB) I-215 to Bangerter Highway | 1.11 | 1.08 | 1.09 |
| I-15, (NB) I-215 to Bangerter Highway | 0.93 | 0.92 | 0.92 |
| I-15, (SB) Bangerter Highway to Point of the Mountain | 1.23 | 1.14 | 1.14 |
| I-15, (NB) Bangerter Highway to Point of the Mountain | 0.86 | 0.82 | 0.82 |
| I-80, (WB) 7200 West to Bangerter Highway | 0.74 | 0.96 | 0.95 |
| I-80, (EB) 7200 West to Bangerter Highway | 0.46 | 0.63 | 0.56 |
| I-80, (WB) Bangerter Highway to I-215 | 0.64 | 0.78 | 0.73 |
| I-80, (EB) Bangerter Highway to I-215 | 0.89 | 0.95 | 0.93 |
| I-80, (WB) I-215 to I-15 | 0.74 | 0.81 | 0.78 |
| I-80, (EB) I-215 to I-15 | 0.71 | 0.78 | 0.78 |
| SR 201, (WB) SR 111 to Bangerter Highway | 0.88 | 0.94 | 0.94 |
| SR 201, (EB) SR 111 to Bangerter Highway | 0.76 | 0.77 | 0.74 |
| SR 201, (WB) Bangerter Highway to I-15 | 0.84 | 0.96 | 0.92 |
| SR 201, (EB) Bangerter Highway to I-15 | 0.93 | 0.96 | 0.93 |
| <i>North-South Principal Arterials</i> | | | |
| SR 111, SR 201 to 3500 South | 1.24 | 1.06 | 1.05 |
| SR 111, 3500 South to 6200 South | 1.40 | 1.21 | 1.20 |
| SR 111, 6200 South to New Bingham Highway | 1.32 | 1.24 | 1.25 |
| 7200 West, I-80 to SR 201 | 0.64 | 0.77 | NA |
| 7200 West, SR 201 to 4100 South | 1.27 | 1.09 | 0.84 |
| 5600 West, I-80 to SR 201 | 0.69 | 0.73 | 0.97 |
| 5600 West, SR 201 to 3500 South | 1.27 | 1.18 | 1.23 |
| 5600 West, 3500 South to 6200 South | 1.36 | 1.22 | 1.22 |
| 5600 West, 6200 South to 9000 South ^b | 1.14 | 1.10 | 1.10 |
| <i>East-West Principal Arterials</i> | | | |
| California Avenue, 7200 West to Bangerter Highway | 0.45 | 0.66 | 0.89 |
| 2700 South, SR 111 to 5600 West | 0.80 | 0.78 | 0.95 |
| 2700 South, 5600 West to Bangerter Highway | 0.94 | 0.94 | 0.95 |
| 3500 South, 8400 West to 5600 West | 0.75 | 0.79 | 0.78 |
| 3500 South, 5600 West to Bangerter Highway | 0.98 | 0.96 | 0.99 |

▲ ▲

| Segment | 2030 V/C Ratio ^a (PM Peak Period) | | |
|--|---|-------------------------------------|-------------------------------------|
| | No-Action Alternative | 5800 West Freeway Alternative | 7200 West Freeway Alternative |
| 4100 South, SR 111 to 5600 West | 0.75 | 0.79 | 0.75 |
| 4100 South, 5600 West to Bangerter Highway | 1.09 | 1.03 | 1.08 |
| 5400 South, SR 111 to Bangerter Highway | 0.99 | 0.99 | 1.02 |
| 6200 South, SR 111 to Bangerter Highway | 1.04 | 1.01 | 1.02 |
| 7800 South, SR 111 to Bangerter Highway | 1.00 | 1.00 | 1.01 |
| 9000 South, SR 111 to Bangerter Highway | 1.01 | 1.07 | 1.07 |
| 11400 South/11800 South, SR 111 to Bangerter Highway | 0.93 | 1.02 | 1.02 |
| 12600 South, 5600 West to Bangerter Highway | 1.08 | 1.11 | 1.12 |
| 13400 South, 5600 West to Bangerter Highway | 0.91 | 0.98 | 0.99 |
| NA = not applicable | | | |
| ^a V/C ratios: Less than 0.5 = minor to no congestion; 0.5 to 0.74 = moderate congestion; 0.75 to 0.99 = heavy congestion; 1.0 or higher = severe congestion, stop-and-go traffic. | | | |

▼ ▼

Table 8.4-7. 2030 Intersection Delay and Level of Service under the No-Action Alternative and Salt Lake County Action Alternatives with Tolling Option

| Intersection | 2030 Intersection Conditions (PM Peak Period) | | | | | |
|-------------------------------------|--|-----|----------------------------------|-----|----------------------------------|-----|
| | No-Action Alternative | | 5800 West Freeway Alternative | | 7200 West Freeway Alternative | |
| | Delay (seconds) | LOS | Delay (seconds) | LOS | Delay (seconds) | LOS |
| SR 111 & 3500 South | 51.0 | D | 31.1 | C | 30.6 | C |
| SR 111 & 5400 South | 48.3 | D | 38.4 | D | 49.4 | D |
| SR 111 & 6200 South | 20.9 | C | 19.2 | B | 22.0 | C |
| 7200 West & 3500 South | 80.5 | F | 52.4 | D | 54.0 ^a | D |
| 5600 West & California Avenue | 47.8 | D | 60.9 | E | 106.6 | F |
| 5600 West & SR 201 WB ramps | 46.2 | D | 18.0 | B | 37.3 | D |
| 5600 West & SR 201 EB ramps | 12.4 | B | 4.9 | A | 20.5 | C |
| 5600 West & 3500 South | 93.9 | F | 122.0 | F | 100.2 | F |
| 5600 West & 4100 South | 94.1 | F | 72.2 | E | 75.5 | E |
| 5600 West & 5400 South | 108.4 | F | 77.7 | E | 84.5 | F |
| 5600 West & 6200 South | 71.2 | E | 64.2 | E | 66.2 | E |
| 5600 West & 7800 South | 36.7 | D | 61.6 | E | 55.1 | E |
| 5600 West & 9000 South | 61.1 | E | 56.5 | E | 63.8 | E |
| Bangerter Highway & SR 201 WB ramps | 64.0 | E | 61.2 | E | 70.5 | E |
| Bangerter Highway & SR 201 EB ramps | 74.9 | E | 55.6 | E | 72.2 | E |
| Bangerter Highway & 3500 South | 147.4 | F | 117.5 | F | 127.1 | F |
| Bangerter Highway & 5400 South | 163.5 | F | 87.8 | F | 89.1 | F |
| Bangerter Highway & 6200 South | 184.8 | F | 155.3 | F | 159.5 | F |
| Bangerter Highway & 9000 South | 162.1 | F | 144.1 | F | 147.3 | F |
| Bangerter Highway & 10400 South | 153.3 | F | 125.5 | F | 126.8 | F |
| Bangerter Highway & 12600 South | 95.3 | F | 90.1 | F | 92.8 | F |
| Bangerter Highway & 13400 South | >180 | F | >180 | F | >180 | F |

^a Delay and LOS represent a weighted average of the northbound and southbound intersections.

8.4.3.3 7200 West Freeway Alternative

As described in Chapter 2, Alternatives, this alternative would consist of a freeway extending from I-80 to the Utah County line. The 7200 West Freeway Alternative that was analyzed included the Dedicated Right-of-Way Option from the 5600 West Transit Alternative. The combination of the 7200 West

| 7200 West Freeway Alternative Impacts | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 13 |
| Segments with less congestion compared to the No-Action Alternative | 26 |
| Intersections with greater delay compared to the No-Action Alternative | 4 |
| Intersections with less delay compared to the No-Action Alternative | 18 |

Freeway Alternative with either of the transit options would result in the same travel demand impacts, so the results of the analysis would have been the same if the Mixed-Traffic Option had been used.

Congestion Levels on Key Road Segments

Table 8.4-4 above on page 8-24 summarizes the projected V/C ratios for key road segments in Salt Lake County under the 7200 West Freeway Alternative.

Compared to the No-Action Alternative, most of the principal arterial segments under the 7200 West Freeway Alternative would have lower levels of congestion. The reduced congestion would be due to motorists using the MVC during the primary morning and evening commute periods instead of using the principal arterials.

On I-80 and SR 201, congestion would be mostly heavy under both the No-Action Alternative and the 7200 West Freeway Alternative. The greater level of congestion under the 7200 West Freeway Alternative is a result of the traffic either entering or exiting the MVC from I-80 and SR 201. This weaving between freeways increases congestion as traffic merges from one facility to the other. On 5600 West from I-80 to SR 201, California Avenue from 7200 West to Bangerter Highway, 2700 South from SR 111 to 5600 West, and 3500 South from 8400 West to 5600 West, congestion would worsen under the 7200 West Freeway Alternative and would become heavy.

Overall congestion levels on the roadway segments analyzed would decrease under the 7200 West Freeway Alternative compared to the No-Action Alternative. About 26 road segments would operate at improved conditions and 13 would operate at more congested conditions in 2030 compared to the No-Action Alternative.

Delay and Level of Service at Key Intersections

Table 8.4-5 above on page 8-26 shows how key intersections would operate under the 7200 West Freeway Alternative. In most cases, the intersections would operate with less delay and an improved level of service compared to the No-Action Alternative. At the 5600 West/California Avenue intersection, the delay would increase and the level of service would worsen.

Combined Impacts of 7200 West Freeway and 5600 West Transit Alternatives

As with the 5800 West Freeway Alternative, the 7200 West Freeway Alternative would be implemented with one of the two 5600 West Transit Alternative options. The combination of the freeway alternative with either of the transit options would result in the same travel demand impacts.

7200 West Freeway Alternative with Dedicated Right-of-Way Transit Option

Because the 7200 West Freeway Alternative was evaluated with the Dedicated Right-of-Way Transit Option, the impacts to delay and level of service from the 7200 West Freeway Alternative with Dedicated Right-of-Way Transit Option would be the same as those from the 7200 West Freeway Alternative above.

7200 West Freeway Alternative with Mixed-Traffic Transit Option

Because the 7200 West Freeway Alternative was evaluated with the Dedicated Right-of-Way Transit Option, and because the combination of the 7200 West Freeway Alternative with the Mixed-Traffic Transit Option would have the same travel demand impacts, the impacts to delay and level of service from the 7200 West Freeway Alternative with Mixed-Traffic Transit Option would be the same as those from the 7200 West Freeway Alternative above.

7200 West Freeway Alternative with Tolling Option

This option would consist of a freeway extending from I-80 to the Utah County line.

Congestion Levels on Key Road Segments

Table 8.4-6 above on page 8-29 summarizes the projected V/C ratios for key road segments in Salt Lake County

under the 7200 West Freeway Alternative with Tolling Option. Compared to the No-Action Alternative, just over half of the key road segments would have worse levels of congestion under the 7200 West Freeway Alternative with Tolling Option than under the No-Action Alternative. The higher congestion would be due to motorists using the principal arterials during the primary morning and evening commute periods instead of using the MVC.

Overall, congestion levels would increase on the roadway segments analyzed under the 7200 West Freeway Alternative with Tolling Option compared to the No-Action Alternative. As shown in Table 8.4-6 above, 19 road segments would operate at the same or improved conditions and 20 would operate at a more congested conditions in 2030 compared to the No-Action Alternative.

Delay and Level of Service at Key Intersections

Table 8.4-7 above on page 8-31 shows how key intersections would operate under the 7200 West Freeway Alternative with Tolling Option. Compared to the No-Action Alternative, all but eight of the intersections analyzed would experience improved performance under the 7200 West Freeway Alternative with Tolling Option. Of these eight, three intersections would experience a drop in level of service.

| 7200 West Freeway Alternative with Tolling Option Impacts | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 20 |
| Segments with less congestion compared to the No-Action Alternative | 19 |
| Intersections with greater delay compared to the No-Action Alternative | 8 |
| Intersections with less delay compared to the No-Action Alternative | 14 |

8.4.4 Utah County Alternatives

In Utah County, three alternatives are under consideration: the Southern Freeway Alternative, the 2100 North Freeway Alternative, and the Arterials Alternative. In addition, a tolling option was evaluated for each Utah County alternative. Impacts under each combination of alternatives and options are discussed in the following sections.

8.4.4.1 Southern Freeway Alternative

As described in Chapter 2, Alternatives, this alternative would consist of a freeway extending from the Utah County line to I-15 at Lindon.

Congestion Levels on Key Road Segments

Table 8.4-8 below summarizes the V/C ratios for key road segments in Utah County under the Southern Freeway Alternative. In Table 8.4-8, the shaded cells indicate road segments where the congestion levels under an action alternative would be greater than those under the No-Action Alternative.

The overall congestion levels on the roadway segments analyzed would be reduced under the Southern Freeway Alternative compared to the No-Action Alternative. The reduced congestion would be due to motorists using the MVC during the primary morning and evening commute periods instead of using the principal arterials. However, the segment of I-15 from the Pleasant Grove interchange to University Parkway would be more congested under the Southern Freeway Alternative than under the No-Action Alternative. This congestion would result from the additional traffic from MVC onto I-15.

Delay and Level of Service at Key Intersections

Table 8.4-9 on page 8-37 shows how key intersections would operate under the Southern Freeway Alternative. In the table, shaded cells indicate intersections where conditions would be more congested under an action alternative than under the No-Action Alternative. Under this alternative, four out of the five study intersections would operate with less delay under the Southern Freeway Alternative than under the No-Action Alternative.

| Southern Freeway Alternative Impacts | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 1 |
| Segments with less congestion compared to the No-Action Alternative | 13 |
| Intersections with greater delay compared to the No-Action Alternative | 1 |
| Intersections with less delay compared to the No-Action Alternative | 4 |

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Table 8.4-8. 2030 Congestion Levels for Key Road Segments under the No-Action Alternative and Utah County Action Alternatives

| Segment | 2030 V/C Ratio ^a (PM Peak Period) | | | |
|--|---|------------------------------------|--------------------------------------|--------------------------|
| | No-Action Alternative | Southern Freeway Alternative | 2100 North Freeway Alternative | Arterials Alternative |
| <i>Freeways</i> | | | | |
| I-15, (SB) County Line to Lehi 1200 W. | 0.91 | 0.73 | 0.78 | 0.75 |
| I-15, (NB) County Line to Lehi 1200 W. | 0.82 | 0.64 | 0.69 | 0.70 |
| I-15, (SB) Lehi 1200 W. to Pleasant Grove | 0.80 | 0.63 | 0.84 | 0.77 |
| I-15, (NB) Lehi 1200 W. to Pleasant Grove | 0.79 | 0.56 | 0.85 | 0.74 |
| I-15, (SB) Pleasant Grove to University Parkway | 0.82 | 0.83 | 0.83 | 0.83 |
| I-15, (NB) Pleasant Grove to University Parkway | 0.84 | 0.84 | 0.85 | 0.83 |
| <i>North-South Principal Arterials</i> | | | | |
| Redwood Road, Bangerter Highway to SR 73 | 1.37 | 0.91 | 0.92 | 0.87 |
| 2300 West (Lehi), 2100 North to SR 73 | 1.11 | 0.84 | 0.83 | 0.77 |
| 2300 West (Lehi), SR 73 to 1900 South | 0.83 | 0.76 | 0.52 | 0.46 |
| <i>East-West Principal Arterials</i> | | | | |
| Porter Rockwell, MVC to I-15 | NA | 0.81 | 0.67 | 0.94 |
| 2100 North, MVC to I-15 | NA | 0.38 | 0.89 | 1.01 |
| Lehi Main Street (SR 73), MVC to I-15 | 1.24 | 0.94 | 0.95 | 0.84 |
| 1000 South, SR 73 to I-15 | 1.25 | 0.73 | 0.86 | 0.78 |
| 1900 South, Redwood Road to I-15 | NA | NA | NA | 0.75 |
| NA = not applicable | | | | |
| ^a V/C ratios: Less than 0.5 = minor to no congestion; 0.5 to 0.74 = moderate congestion; 0.75 to 0.99 = heavy congestion; 1.0 or higher = severe congestion, stop-and-go traffic. | | | | |

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Table 8.4-9. 2030 Intersection Delay and Level of Service under the No-Action Alternative and Utah County Action Alternatives

| Intersection | 2030 Intersection Conditions (PM Peak Period) | | | | | | | |
|-----------------------------------|--|-----|------------------------------------|-----|--------------------------------------|-----|--------------------------|-----|
| | No-Action Alternative | | Southern Freeway Alternative | | 2100 North Freeway Alternative | | Arterials Alternative | |
| | Delay (seconds) | LOS | Delay (seconds) | LOS | Delay (seconds) | LOS | Delay (seconds) | LOS |
| Redwood Road & SR 73 | 147.9 | F | 47.3 | D | 52.7 | D | 39.7 | D |
| 2300 West (Lehi) & SR 73 | 139.4 | F | 76.9 | E | 57.5 | E | 35.3 | D |
| Center St. (Lehi) & SR 73 | 27.4 | C | 11.6 | B | 15.6 | B | 12.1 | B |
| Pleasant Grove & I-15 SB ramps | 20.5 | C | 33.4 | C | 29.7 | C | 87.4 | F |
| Pleasant Grove & I-15 NB ramps | 15.6 | B | 11.6 | B | 8.7 | A | 147.8 | F |

Southern Freeway Alternative with Tolling Option

Congestion Levels on Key Road Segments

Table 8.4-10 below summarizes the V/C ratios for key road segments in Utah County under the Southern Freeway Alternative with Tolling Option. In Table 8.4-10, the shaded cells indicate road segments where the congestion levels under an action alternative would be greater than those under the No-Action Alternative.

The reduced congestion levels on the roadway segments analyzed under this alternative would be due to motorists using the MVC during the primary morning and evening commute periods instead of using the principal arterials. However, the segment of I-15 from the Pleasant Grove interchange to University Parkway would be more congested under the Southern Freeway Alternative with Tolling Option than under the No-Action Alternative, and the congestion would remain heavy.

| Southern Freeway Alternative with Tolling Option Impacts | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 1 |
| Segments with less congestion compared to the No-Action Alternative | 13 |
| Intersections with greater delay compared to the No-Action Alternative | 2 |
| Intersections with less delay compared to the No-Action Alternative | 3 |

Table 8.4-10. 2030 Congestion Levels for Key Road Segments under the No-Action Alternative and Utah County Action Alternatives with Tolling Option

| Segment | 2030 V/C Ratio ^a (PM Peak Period) | | | |
|--|---|------------------------------------|--------------------------------------|--------------------------|
| | No-Action Alternative | Southern Freeway Alternative | 2100 North Freeway Alternative | Arterials Alternative |
| <i>Freeways</i> | | | | |
| I-15, (SB) County Line to Lehi 1200 W. | 0.91 | 0.84 | 0.87 | 0.84 |
| I-15, (NB) County Line to Lehi 1200 W. | 0.82 | 0.79 | 0.82 | 0.79 |
| I-15, (SB) Lehi 1200 W. to Pleasant Grove | 0.80 | 0.76 | 0.83 | 0.78 |
| I-15, (NB) Lehi 1200 W. to Pleasant Grove | 0.79 | 0.74 | 0.84 | 0.75 |
| I-15, (SB) Pleasant Grove to University Parkway | 0.82 | 0.82 | 0.82 | 0.81 |
| I-15, (NB) Pleasant Grove to University Parkway | 0.84 | 0.85 | 0.85 | 0.83 |
| <i>North-South Principal Arterials</i> | | | | |
| Redwood Road, Bangerter Highway to SR 73 | 1.37 | 1.28 | 1.26 | 1.23 |
| 2300 West (Lehi), 2100 North to SR 73 | 1.11 | 1.00 | 1.05 | 0.96 |
| 2300 West (Lehi), SR 73 to 1900 South | 0.83 | 0.75 | 0.68 | 0.56 |
| <i>East-West Principal Arterials</i> | | | | |
| Porter Rockwell, MVC to I-15 | NA | 0.75 | 0.73 | 0.83 |
| 2100 North, MVC to I-15 | NA | 0.30 | 0.90 | 0.84 |
| Lehi Main Street (SR 73), MVC to I-15 | 1.24 | 1.17 | 1.07 | 0.85 |
| 1000 South, SR 73 to I-15 | 1.25 | 1.12 | 1.01 | 0.77 |
| 1900 South, Redwood Road to I-15 | NA | NA | NA | 0.74 |
| NA = not applicable | | | | |
| ^a V/C ratios: Less than 0.5 = minor to no congestion; 0.5 to 0.74 = moderate congestion; 0.75 to 0.99 = heavy congestion; 1.0 or higher = severe congestion, stop-and-go traffic. | | | | |

Delay and Level of Service at Key Intersections

Table 8.4-11 below shows how key intersections would operate under the Southern Freeway Alternative with Tolling Option. In the table, shaded cells indicate intersections where conditions would be more congested under an action alternative than under the No-Action Alternative. Under this option, three of the five intersections would operate with less delay than under the No-Action Alternative.

At the intersection of Redwood Road and SR 73, the increase in delay would cause the intersection level of service to remain at LOS F. The decrease in delay at the intersection of Center Street and Lehi's Main Street (SR 73) would change the level of service from LOS C to LOS B.

Table 8.4-11. 2030 Intersection Delay and Level of Service under the No-Action Alternative and Utah County Action Alternatives with Tolling Option

| Intersection | 2030 Intersection Conditions (PM Peak Period) | | | | | | | |
|-----------------------------------|--|-----|------------------------------------|-----|--------------------------------------|-----|--------------------------|-----|
| | No-Action Alternative | | Southern Freeway Alternative | | 2100 North Freeway Alternative | | Arterials Alternative | |
| | Delay (seconds) | LOS | Delay (seconds) | LOS | Delay (seconds) | LOS | Delay (seconds) | LOS |
| Redwood Road & SR 73 | 147.9 | F | 157.4 | F | 81.2 | F | 83.3 | F |
| 2300 West (Lehi) & SR 73 | 139.4 | F | 123.1 | F | 59.3 | E | 50.2 | D |
| Center St. (Lehi) & SR 73 | 27.4 | C | 18.1 | B | 13.3 | B | 12.0 | B |
| Pleasant Grove & I-15 SB ramps | 20.5 | C | 23.8 | C | 30.3 | C | 90.1 | F |
| Pleasant Grove & I-15 NB ramps | 15.6 | B | 8.4 | A | 9.0 | A | 137.4 | F |

8.4.4.2 2100 North Freeway Alternative

As described in Chapter 2, Alternatives, this alternative would consist of a freeway extending from the Utah County line to SR 73 in Saratoga Springs and a lateral freeway extending east along 2100 North to I-15 in Lehi.

Congestion Levels on Key Road Segments

Table 8.4-8 above on page 8-36 summarizes the V/C ratios for key road segments in Utah County under the 2100 North Freeway Alternative. Ten road segments would have less congestion than under the No-Action Alternative. Note that, although I-15 would operate at a more congested level under this alternative compared to the No-Action Alternative, the congestion level would remain within an acceptable range (LOS D).

2100 North Freeway Alternative Impacts

| | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 4 |
| Segments with less congestion compared to the No-Action Alternative | 10 |
| Intersections with greater delay compared to the No-Action Alternative | 1 |
| Intersections with less delay compared to the No-Action Alternative | 4 |

Delay and Level of Service at Key Intersections

Table 8.4-9 above on page 8-37 shows how key intersections would operate under the 2100 North Freeway Alternative. Under this alternative, four of the five study intersections would operate with less delay than under the No-Action Alternative.

At the intersections of the southbound I-15 ramp and Pleasant Grove Boulevard, the increase in delay would not cause the level of service to change from LOS C.

2100 North Freeway Alternative with Tolling Option

Congestion Levels on Key Road Segments

Table 8.4-10 above on page 8-38 summarizes the V/C ratios for key road segments in Utah County under the 2100 North Freeway Alternative with Tolling Option. Eleven segments would operate at improved conditions compared to the No-Action Alternative.

| 2100 North Freeway Alternative with Tolling Option Impacts | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 3 |
| Segments with less congestion compared to the No-Action Alternative | 11 |
| Intersections with greater delay compared to the No-Action Alternative | 1 |
| Intersections with less delay compared to the No-Action Alternative | 4 |

Delay and Level of Service at Key Intersections

Table 8.4-11 above on page 8-39 shows how key intersections would operate under the 2100 North Freeway Alternative with Tolling Option. Under this option, four of the five study intersections would operate with less delay than under the No-Action Alternative.

8.4.4.3 Arterials Alternative

As described in Chapter 2, Alternatives, this alternative would consist of a series of arterial roadways throughout northern Utah County. The combination of arterials includes a freeway segment from the Utah County line to SR 73 and arterial roadways at Porter Rockwell Boulevard, 2100 North, and 1900 South.

The expected transportation impacts for each option are discussed below.

| Arterials Alternative Impacts | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 1 |
| Segments with less congestion compared to the No-Action Alternative | 13 |
| Intersections with greater delay compared to the No-Action Alternative | 2 |
| Intersections with less delay compared to the No-Action Alternative | 3 |

Congestion Levels on Key Road Segments

Table 8.4-8 above on page 8-36 summarizes the V/C ratios for the key road segments in Utah County under the Arterials Alternative. The overall congestion levels on the roadway segments analyzed would be reduced under the Arterials Alternative compared to the No-Action Alternative. The congestion level on 2100 North from the MVC to I-15 would be heavy.

Delay and Level of Service at Key Intersections

Table 8.4-9 above on page 8-37 shows how key intersections would operate under the Arterials Alternative. Under this alternative, three of the five study intersections would operate with less delay than under the No-Action Alternative.

At the intersections of the northbound and southbound I-15 ramps and Pleasant Grove Boulevard, the increase in delay would cause the level of service to drop from LOS C to LOS F at the southbound ramp and from LOS B to LOS F at the northbound ramp.

Arterials Alternative with Tolling Option

Congestion Levels on Key Road Segments

Table 8.4-10 above on page 8-38 summarizes the V/C ratios for the key road segments in Utah County under the Arterials Alternative with Tolling Option. As shown in this table, all segments would have the same or less congestion under the Arterials Alternative with Tolling Option than under the

| Arterials Alternative with Tolling Option Impacts | |
|--|----|
| Segments with greater congestion compared to the No-Action Alternative | 0 |
| Segments with less congestion compared to the No-Action Alternative | 14 |
| Intersections with greater delay compared to the No-Action Alternative | 2 |
| Intersections with less delay compared to the No-Action Alternative | 3 |

No-Action Alternative. Note that, under the Arterials Alternative with Tolling Option, only the freeway portion would be tolled. The arterials would not be tolled.

Delay and Level of Service at Key Intersections

Table 8.4-11 above on page 8-39 shows how key intersections would operate under the Arterials Alternative with Tolling Option. Under this option, three of the five study intersections would operate with less delay than under the No-Action Alternative.

At the intersections of the northbound and southbound I-15 ramps and Pleasant Grove Boulevard, the increase in delay would cause the level of service at both intersections to drop from LOS C to LOS F at the southbound ramp and from LOS B to LOS F at the northbound ramp.

8.4.5 Mitigation Measures

Although the MVC project might increase congestion on adjacent roads as a result of traffic entering or exiting the MVC, no mitigation measures are proposed.

8.4.6 Cumulative Impacts

Cumulative impacts were analyzed for local and regionally important issues (farmlands, air quality, water quality, and ecosystems) as developed with resource agencies and the public during scoping. See Chapter 25, Cumulative Impacts, for a more detailed discussion of cumulative impacts.

8.4.7 Summary of Impacts

In order to determine the transportation impacts for Salt Lake and Utah Counties, the individual alternatives for each county had to be combined with an alternative from the other county. All of the Salt Lake County alternatives were modeled with the Southern Freeway Alternative in Utah County. All of the Utah County alternatives were modeled with the 5800 West Freeway Alternative in Salt Lake County. These alternative combinations produced the greatest traffic volumes for each alternative and so provided the greatest level of impact for the combined Salt Lake County and Utah County alternatives. Although not every potential scenario was modeled, the impacts provided for each individual alternative above adequately represent the combined impacts.

Table 8.4-12 below shows the impacts associated with each action alternative in terms of congestion levels on key road segments and delay at key intersections.

Table 8.4-12. Summary of Impacts to Transportation

| Alternative | Segments with Congestion | | Intersection Delays | |
|---|--|--|--|--|
| | Segments with More Congestion than No-Action | Segments with Less Congestion than No-Action | Segments with More Congestion than No-Action | Segments with Less Congestion than No-Action |
| <i>5800 West Freeway / 5600 West Transit / Southern Freeway</i> | | | | |
| Without tolling | 13 | 40 | 4 | 23 |
| With tolling | 20 | 33 | 5 | 22 |
| <i>5800 West Freeway / 5600 West Transit / 2100 North Freeway</i> | | | | |
| Without tolling | 16 | 37 | 4 | 23 |
| With tolling | 22 | 31 | 4 | 23 |
| <i>5800 West Freeway / 5600 West Transit / Arterials</i> | | | | |
| Without tolling | 13 | 40 | 5 | 22 |
| With tolling | 19 | 34 | 5 | 22 |
| <i>7200 West Freeway / 5600 West Transit / Southern Freeway</i> | | | | |
| Without tolling | 14 | 39 | 4 | 23 |
| With tolling | 21 | 32 | 10 | 17 |
| <i>7200 West Freeway / 5600 West Transit / 2100 North Freeway</i> | | | | |
| Without tolling | 17 | 36 | 5 | 22 |
| With tolling | 23 | 30 | 9 | 18 |
| <i>7200 West Freeway / 5600 West Transit / Arterials</i> | | | | |
| Without tolling | 14 | 39 | 6 | 21 |
| With tolling | 20 | 33 | 10 | 17 |

8.5 References

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